

This rejection is respectfully traversed.

EP 535 711 discloses removal of the unsintered sheets by conventional methods, such as sand blast, ultrasonic cleaning, brushing, water-jetting and the like. EP 0535 711, page 4, lines 56-57. The Office admits that EP 535 711 does not disclose removing the unsintered sheets by spraying alumina powder, water, and compressed air. Paper 14, page 3, lines 8-9.

JP 6-125171 discloses a process in which the unsintered sheets are peeled off and the remaining particles polished off by lap, barrel, puff, sandblast, sander belt, hydrofluoric acid, etc. JP 6-125171, Abstract, lines 10-17. Removal of the remaining particles by a sandblasting as a dry process by spraying particles such as alumina is disclosed. JP 6-125171, ¶ 16.

Dudding discloses an apparatus for wet blasting. Title and Abstract.

The Office has not made the *prima facie* case. Combination of the references in the manner suggested by the Office does not produce applicants' invention. Applicants' claims recite a process in which the shrinkage suppression sheet is removed by spraying ceramic powder and water together with compressed air onto said shrinkage suppression sheet on the at least one face of said green sheet laminated body after firing, and in which the ceramic powder comprises the same ceramic material as said shrinkage suppression sheet. In contrast, EP 535 711 teaches removal of the unsintered material by sandblast or water jetting.

This deficiency is not overcome by JP 6-12517, Dudding, or the combination thereof. JP 6-125171 teaches removal of the remaining particles, not the entire sheet, by a dry process, not by a mixture of particles and water. Dudding does not disclose anything about the removal of sintered sheets. Thus, combination of the references does not produce the claimed invention.

Further, although Dudding discloses an apparatus for wet blasting, there is no disclosure or suggestion to use wet blasting to remove a shrinkage suppression sheet or to use the same material as is being removed as the abrasive. To prevent

the use of hindsight based on the invention to defeat patentability of the invention, the Office is required to show a motivation to combine the references that create the case of obviousness. *In re Rouffet*, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998).

Further, JP 6-12517 teaches away from applicants' invention. JP 6-12517 teaches removal of the unsintered sheet by lap, barrel, puff, sandblast, sander belt, hydrofluoric acid, etc. Only the remaining particles are removed by blasting. The person of ordinary skill in the art, having the advantage of the teachings of JP 6-12517, would not be motivated to remove the entire sheet by blasting.

The Office has not made the *prima facie* case. The rejection of claims 1, 3, 7, 9, and 14-16 as unpatentable over EP 535 711 in view of JP 6-125171 and Dudding should be withdrawn.

#### **Second Rejection under 35 U.S.C. § 103(a)**

Claims 4, 5, 10, and 11 were rejected under 35 U.S.C. § 103(a) as unpatentable over EP 535 711 in view of JP 6-125171 and Dudding, and further in view of Kim, U.S. Patent.4,896,464 ("Kim"). This rejection is respectfully traversed.

Kim discloses a process in which ceramic material is abraded away to form a module comprising protruding, upstanding electrically conductive pins. Abstract. The ceramic material is formed by baking a multilayered structure such that greensheet layers are converted into a multilayered ceramic module. Kim, column 6, lines 44-49. The abrasive particles may be any suitable abrasive such as aluminum oxide, silicon carbide, or tungsten carbide. Kim, column 4, lines 31-34. Removal is carried out with "abrasive particles" or "grit," not with a mixture of water and particles. Kim, column 6, lines 5-14.

The Office has not made the *prima facie* case. The combination of references does not disclose removing the entire unsintered sheet by sandblasting. As discussed above, JP 6-125171 teaches removal of the remaining particles, not the entire sheet, by a dry process, not by a mixture of particles and water.

Although Dudding discloses an apparatus for wet blasting, but there is no disclosure or suggestion to use wet blasting to remove a shrinkage suppression sheet or to use the same material as is being removed as the abrasive. These deficiencies are not overcome by Kim. Kim teaches a dry process, not a wet process, to remove sintered rather than unsintered material.

Further, the Office cites Kim for the teaching of a pressure of 50 psi and a particle size of 12 to 20 microns. Paper 14, page 4, lines 20-23. However, these parameters refer to the dry process disclosed by Kim, not to the wet process recited by applicants' claims. There is no indication that the person of ordinary skill in the art would be motivated to apply these parameters from a dry process to the wet process recited by applicants' claims.

The Office has not made the *prima facie* case. The rejection of claims 4, 5, 10, and 11 as unpatentable over EP 535 711 in view of JP 6-125171, Dudding, and Kim should be withdrawn.

### **Third Rejection under 35 U.S.C. § 103(a)**

Claim 8 was rejected under 35 U.S.C. § 103(a) as unpatentable over EP 535 711 in view of JP 6-125171, Dudding, and Kim, and further in view of Yam, U.S. Patent 5,827,114 ("Yam"). This rejection is respectfully traversed.

Yam discloses a slurry blasting process in which the liquid carrier medium contains a dispersed water-soluble particulate abrasive. Yam, Abstract. Yam discusses the use wet process in which abrasive materials are used to remove "adherent materials." Yam,

However, the reference teaches away from applicants' invention.

Thus, it would be most worthwhile to use a water soluble abrasive blast media with the water stream to accelerate the particles through the blast nozzle and treat softer substrates and/or avoid the costly clean-up expenses inherent upon using hard, water

insoluble abrasives such as sand.

Yam, column 2, lines 32-37 (emphasis added).

Still further, there is needed a wet blasting process wherein a mixture of soluble abrasive particles dispersed within a liquid stream is directed to a target surface and wherein the integrity of the soluble abrasive particle during transport from the supply of abrasive particles to the blast nozzle apparatus and/or from the blast nozzle apparatus to the targeted surface can be maintained so as to retain the maximum cutting force of the particles and at the same time, take advantage of the soluble nature of the abrasive particles with respect to vastly reduced clean-up costs relative to such costs when insoluble abrasive blast media such as sand is used.

Yam, column 4, lines 26-37 (emphasis added).

As shown by these passages, Yam teaches that water soluble abrasives have "vastly reduced clean up costs" relative to insoluble abrasives.

A reference must be considered for all that it teaches, including disclosures that teach away from the invention as well as disclosures that point toward the invention. A reference that teaches away from an invention cannot make it obvious. The person of ordinary skill in the art, having the advantage of the teachings of Yam, would be motivated to select a water soluble material as the abrasive, not the same ceramic material that is being removed, because Yam teaches that there are "vastly reduced cleanup costs" when water soluble abrasives are used.

The Office has not made the *prima facie* case. The rejection of claim 8 as unpatentable over EP 535 711 in view of JP 6-125171, Dudding, Kim, and Yam should be withdrawn.

**Conclusion**

It is respectfully submitted that the claims are in condition for immediate allowance and a notice to this effect is earnestly solicited. The Examiner is invited to phone applicants' attorney if it is believed that a telephonic or personal interview would expedite prosecution of this application.

Respectfully submitted,

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